

CHAPTER 7. POWERPLANT REPAIRS

1. BACKGROUND. This chapter provides classifications of turbine engine structural parts and the general classifications of engine repairs.

3. TURBINE ENGINE PART CLASSIFICATIONS.

Although each manufacturer may not use the identical terminology used below, what they use will be equivalent to the following:

A. Structural engine parts include the following:

- All frames
- All casings/housings
- Engine mounts and associated engine structures
- Complete rotor assemblies

B. Engine frames include the following:

- Front frames or front bearing support
- Compressor rear frame
- Turbine mid-frame
- Turbine rear-frame or rear bearing support

C. Engine combustion casings/housings include the following:

- Fan casing
- Compressor, low and high
- Combustor casing/housing
- Turbine casing/housing
- Accessory gear-case housing

5. ENGINE REPAIR CLASSIFICATIONS. The following will apply to modular designed turbine engines, non-modular designed turbine engines, and reciprocating engines, as applicable:

A. *Modular Design Turbine Engines.* The following repair classifications will apply:

(1) The changing of modules are not considered a major repair.

(2) The disassembly of a module may be a major repair. This will be determined by the engine manufacturers repair/overhaul manual.

B. *Non-Modular Design Turbine Engines.* The disassembly of any of the main sections of a turbine engine should be considered a major repair. The main sections consist of the following:

- Fan section
- Compressor section, low and high pressure
- Combustion section
- Turbine section
- Accessory section

C. *Reciprocating Engines.* Major and minor repairs to structural parts of reciprocating engines are classified as follows:

(1) Major repairs include the following:

- Welding of crankcases
- Machining operations necessitated by a weld repair
- Crankshaft grinding
- Camshaft re-contouring and similar complex precision machining
- Boring of crankshaft and camshaft bosses
- Machining of oil-pump housings and accessory drive pads following weld repairs

(2) Minor repairs include simple machine operations, such as spot facing, lapping and grinding valves, and reaming valve guides in accordance with the manufacturer's overhaul and service instructions.

D. Further guidance on major and minor repairs, approved data, and approval for return to service can be found in vol. 2, ch. 1, Perform Field Approval of Major Repairs and Major Alterations.